



REPORT

OF THE

Indian Tariff Board

ON THE

COATED ABRASIVES INDUSTRY

सत्यमेव जयते

PERSONNEL OF THE BOARD

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REPORT ON THE COATED ABRASIVES INDUSTRY

1. This Tariff Board was set up by the Government of India, Department of Commerce, Resolution No. 218-T (55)/45, dated the 3rd

Reference to the Board. November 1945 (Appendix I), for the purpose of investigating claims of industries, which were started or developed in wartime, or the starting of which was considered essential by Government under conditions created by the war, to assistance or protection during the transition period, pending the establishment of a permanent machinery to give effect to their long-term tariff policy in the post-war period. In pursuance of the policy and principles enunciated therein, Government issued Resolution No. 218-T (55)/45, dated the 16th February 1946, referring to the Tariff Board the case, *inter alia*, of all abrasives other than grinding wheels for assistance or protection (Appendix II). In our report on Grinding Wheels we have dealt with the case of grinding wheels and allied bonded abrasives. This report deals with the case of coated abrasives.

2. The first application for protection was submitted by Messrs. Ajax Products Ltd., Madras, to the Government of India,

Applications for protection. Department of Planning and Development, on the 8th June 1945. Subsequently, after the issue of the Government Resolution referring the case to the Tariff Board,

a joint representation was submitted to the Board on the 9th April 1946 by (1) Messrs. Ajax Products Ltd., (2) Krishnalal Thirani & Co., Calcutta, and (3) The National Sand Paper Mills (India) Ltd., Rawalpindi. Separate representations were also sent in by Messrs. Hindustan Abrasives, Bhita (South Bihar), Engineering and Mineral Industrial Research Laboratory, Malleswaram, Bangalore, and Engineering Association of India, Calcutta. No application or representation was submitted by Messrs. Strawboard Manufacturing Co., Lahore, which is also known to be manufacturing coated abrasives on a fairly large scale.

3. On the 19th February 1946, the Board issued a Press Communiqué inviting firms, persons or Associations interested in this industry

Method of inquiry. or dependent upon it for their raw materials or semi-manufactured goods, which desired their views to be considered by the Board, to submit their representations on or before the 31st March 1946. Such representations were required to be supported by facts and figures regarding, *inter alia*,

- (1) demand for the commodity ;
- (2) volume and cost of imports ;
- (3) cost of production ;
- (4) general financial position of the producers ; and
- (5) the exact nature of protection or assistance applied for.

The Board also issued on the 18th February 1946 a detailed questionnaire to producers inviting replies by the 31st March 1946. All Provincial Governments and

Administrations were addressed and requested, besides giving their views, to furnish the Board with full information regarding the works or factories engaged in the production of coated abrasives, their estimated annual output, availability of raw materials for the industry within the Province/Administration, sources and character of demand, possibilities of extension or stabilisation of the present development and the likely effect of the grant of protection to this industry on other industries using coated abrasives. The views of Chambers of Commerce and Associations were invited through a circular letter. The Department of Industries and Supplies Government of India, was requested to furnish the Board with such information regarding the present state of development of the industry and its future prospects as might be of use to the Board. The President of the Board, Mr. C. C. Desai, Dr. H. L. Dey and the Deputy Secretary visited the factory of Ajax Products Ltd., in Madras, and Dr. Nazir Ahmad visited the factory of Messrs. Krishnalal Thirani & Co., in Calcutta, in April 1946. Our Cost Accounts Officer, Mr. P. V. R. Rao, visited the factory of Krishnalal Thirani on the 1st May, and that of Ajax Products Ltd., on the 14th May 1946, and investigated their costs. Oral evidence of representatives of producers and importers was taken at Ootacamund on the 23rd and 24th May 1946. A list of witnesses examined is appended (Appendix III).

4. The first attempt to produce coated abrasives appears to have been made in the year 1929 by the Strawboard Manufacturing Co.

History of the industry. which has its factory at Saharanpur, United Provinces, and its head office at Lahore. But the real beginning in this field took place in the early years of the war. Messrs. Krishnalal Thirani & Co. were started in 1934, but came into actual production in September 1938. Messrs. Ajax Products Ltd. were established in 1939, but came into actual production in September 1941. The National Sand Paper Mills (India) Ltd. were formed and commenced work in 1941. This industry came to be established in India directly as a result of scarcity of supply created by war conditions. In the pre-war period, the country's demands were met by imports from U.K., U.S.A., Italy and Japan. As the war went on, the volume of imports began to decline steadily, and the supply position became very acute after the entry of Japan into the conflict and the declaration of war by the Axis against U.S.A. in December 1941. The indigenous manufacture which had been set up just on the eve of the war naturally got a fillip under these conditions and expanded rapidly. The highest production was attained in 1943, when abrasive rolls and discs, emery paper and cloth, and sand or glass paper and cloth worth Rs. 21 lakhs were manufactured in this country ; but this represented not more than 50 per cent. of the rated capacity of indigenous factories. Besides the six factories named in paragraph 2 above, there are also a number of small cottage producers. Ajax Products Ltd., the principal manufacturers, obtained their entire plant from U.S.A. in 1939. About 50 per cent. of the total capacity of the industry was utilised during the war period, and the rest of the capacity remained idle as the supply of raw materials had been irregular. The products locally manufactured include belts, rolls and discs, emery paper and cloth, and glass or sand paper and cloth. So far as we have been able to ascertain, one important category of coated abrasives, viz., water-proof abrasives, has not yet been produced in this country. But, we are informed that Messrs. Ajax Products Ltd. are deputing one of their technical officers to U.S.A. in the immediate future to study the latest developments and arrange to procure some new equipments so as to enable them to produce all types of coated abrasives.

5. The chief raw materials required for this
Raw materials. industry are :—

- (a) natural abrasive minerals, such as quartz, garnet, corundum and emery ;
- (b) synthetic abrasive minerals, such as silicon carbide and aluminium oxide grains ;
- (c) special type backing (kraft) paper, cloth, and vulcanised fibre ; and
- (d) hide-glue as a bonding material.

Of these, emery is imported from Turkey, and silicon carbide and aluminium oxide grains, kraft paper and vulcanised fibre from U.S.A. All the remaining raw materials are available in India.

6. During the war emery could not be imported freely from Turkey, and indigenous corundum was used as a substitute. But, though the abrasive properties of Indian corundum are said to be better than those of Turkish emery, its cost is excessively high as compared to the normal peace-time price of Turkish emery. Corundum is mined in Rewa State by Messrs. Katas of Amritsar, in Salem by Messrs. Ajax Products Ltd., and also near Tatanagar by others. Indian manufacturers had to pay a price ranging between Rs. 450 and Rs. 600 per ton for indigenous corundum because Turkish emery was not obtainable. The supply of indigenous corundum is also said to be rather inadequate at the present time.

7. Recently Ajax Products Ltd, obtained about 300 tons of Turkish emery at a total cost of Rs. 1,17,000, inclusive of 30 per cent. customs duty. This works out to a price of Rs. 390 per ton with duty, or Rs. 300 per ton without duty. We are, however, informed that it would now be possible to obtain Turkish emery at an estimated cost of Rs. 286 per ton (f. o. b. price Rs. 112, freight and other charges up to factory Rs. 108, and customs duty Rs. 66). In our report on Grinding Wheels, we have mentioned that Katas of Amritsar have been using indigenous corundum in place of imported synthetic aluminium oxide grains with some measure of success. It now appears that this corundum may also be used in place of Turkish emery for manufacturing emery cloth. But, Indian corundum mines are yet in an undeveloped state and its present cost is rather high. Consequently, until such time as these mines are more fully developed and the price of corundum is appreciably reduced, Turkish emery will have to be imported. So far as synthetic grains are concerned, they are products of electric furnaces, and there does not seem to be any likelihood of these grains being produced in India in the near future. We are also informed that vulcanised fibre, which is required in very small quantities in this industry, will have to be imported for the present. As regards kraft paper, we are told that the Indian paper mills are at present not in a position to supply this particular class of paper to the abrasive manufacturers of the country. This also, therefore, will have to be imported as far as the immediate future is concerned.

8. The process of manufacture consists of three stages. Abrasive minerals, as they are brought by rail and road to factory, are boulders roughly 9" by 12" in size. They are pressed through a crusher, which is set with manganese steel jaw plates and is capable of crushing the hardest minerals, such as, corundum, emery, etc. This machine is capable of reducing the raw ore to metal size of 1" by adjustments on the

eccentrics and jaw springs. This reduced size of 1" is fed into the hopper of the roll crushers, wherein it is made into finer sizes. These meshed materials are taken from the crushers to the graders wherein three-deck grading is adopted for producing the actual size of the grains.

9. The second stage of the process takes place in the main plant, otherwise known as the coating machine. The hide-glue is passed into mixing tanks in solution at different temperature according to the requirements of coating and fed at a temperature of 160°F. The coating machine takes the mill-roll of paper or cloth and passes it through the printing-drum-machine, wherein the trade mark is printed on the back of the paper or cloth. From there it passes on through a vacuum drum between the calender rolls of the maker machine and takes the coating of the glue on the side of the surface to be coated. This coated surface of the paper or cloth automatically passes under the spreader below the hopper, and the hopper feeds the grain to be coated. Thereafter, the paper or cloth automatically passes on to a conveyer system with automatic conveyer chains and conveyer sticks. This coated surface goes on to a sizer machine where a similar second coat of glue is given with another set of rollers to fix the coated grains on to the backing. From there the coated paper or cloth is conveyed through conveyer sticks and chains into a chamber called the drying chamber. Necessary humidifying arrangements are provided in the chamber for drying the coated paper or cloth. After being dried, the coated material passes to the take-down-machine wherein it is rolled back into jumbo, i.e., the finished coated abrasive roll. This jumbo is left for ageing and is passed on to the next stage.

10. The third or the last stage is the cutting of the jumbos to the required sizes, for which purpose there are various machines. The rolls are cut into sheets or slit into tapes, rolls, or belt sizes of various shapes. These finished materials then pass through their final stage of weather-proof packing under expert supervision.

11. Before the raw materials such as glue, abrasive minerals, etc., are passed into the manufacturing process, they are tested in the laboratory for their quality and correct adherence to specifications. The finished material undergoes a similar test regarding its conformity to the specific quality and standard required.

12. It would thus appear that the coated abrasives industry, though somewhat mechanised, is a rather simple industry. The mechanical equipment is mainly automatic in operation, mastery over which can be acquired by workers fairly easily and without long training. Moreover, because most of the machines are automatic, several of them can be looked after by a single trained workman. Thus the number of workmen required should ultimately be comparatively small, and the numbers at present employed in the factories are capable of gradual reduction so as to lower the cost of production. It may also be noted that some parts of the equipment, e.g., stone crushers and graders, in which heavy minerals are crushed and graded, are subject to heavy wear and tear and require rather frequent replacement.

13. Coated abrasives are essential consumable stores, and they are extensively used in all industries and handicrafts as the media for
Uses. abraiding, polishing, and sharpening materials of all types.

The large consumers are engineering works, automobile works, leather factories, railways and furniture makers, who use these stores for engineering purposes, wood-working, rubbing down filler surfaces, paint and lacquer-ware surfaces, etc.

14. In 1943, the value of imports of coated abrasives was Rs. 6 lakhs, and the value of indigenous production Rs. 21 lakhs. Out of these, **Estimated demand.** abrasives worth Rs. 9 lakhs were taken for ordnance factories and other Defence Service requirements, while abrasives worth Rs. 18 lakhs remained for civilian use. This is estimated to represent some 1,04,000 to 1,35,000 reams, of abrasives. For the next few years the total demand in the country is not likely to exceed Rs. 20 lakhs in value, which would represent a quantity of roughly between 80,000 and 100,000 reams.

15. As already stated in paragraph 4 above, the pre-war demand was almost entirely met by imports and the principal sources of supply **Imports.** were U.K., U.S.A., Italy and Japan. Coated abrasives are not entered as a separate item in the account of India's Seaborne Trade. Consequently, exact figures of imports cannot be ascertained. The Department of Industries and Supplies, Government of India, has furnished the following figures for imports of coated abrasives during last few years :—

Value of Imports.

	(In lakhs of rupees.)
1939 ..	4·34.
1940 ..	7·85.
1941 ..	6·61.
1942 ..	Net available.
1943 ..	6·08.
1944 ..	6·59.
1945 ..	11·41 (licensed).
1946 ..	7·2 (licensed).*

*According to the information supplied by the Emery Trade Association, London.

16. As stated in paragraph 4 above, domestic production was at its maximum in 1943 when coated abrasives to the value of Rs. 21 lakhs **Domestic production.** were produced by indigenous manufacturers. This would roughly represent a quantity of between 84,000 and 1,04,000 reams and was about 50 per cent. of the rated capacity of domestic manufacturers. The rated capacity of Indian producers is estimated as follows :—

Estimate of annual rated capacity of indigenous producers.

(On the basis of 2 shifts a day)

	Reams.
1. Ajax Products Ltd.	60,000
2. Krishnalal Thirani & Co.	36,000
3. National Sand Paper Mills (Ind.)	36,000
4. Strawboard Manufacturing Co.	24,000
5. Others (including cottage producers)	44,000
Total ..	2,00,000

17. In paragraph 14 above, we have estimated that the demand for coated abrasives in the country during the next two years may be between 80,000 and 1,00,000 reams per annum. It would, therefore, follow that, during this period, the domestic manufacturers would be able to utilise their estimated rated capacity on a single shift basis. It would also follow that the estimates of costs of production should be made on the above basis. Further, so far as the year 1946 is concerned, licences for imports to the value of Rs. 7·6 lakhs have been issued for the first half of the year. To this must be added imports due to arrive against outstanding licences of previous years. One prominent importing firm has put the figure of its outstanding licence of previous years at Rs. 2·4 lakhs (£ 18,000). This would represent a quantity of imports between 38,400 and 48,000 reams during the current year. The indigenous manufacturers, therefore, will have scope for disposing of not more than 50,000 reams in the current year, representing half their rated capacity on a single shift basis. Consequently, the estimates of costs of production for 1946 should be based on this lower output.

18. Ajax have submitted to us a number of testimonial issued by Government

Test House, Alipore, Inspectorate of General Stores,
Quality of indigenous Cawnpore, Controller of Stores, North-Western Railway,
products. South Indian Railway, certain Government Ordnance
 Factories and a number of other users as to the quality of

their coated abrasives. The Department of Industries and Supplies, Government of India, has also expressed the opinion that the indigenous products are satisfactory in respect of quality. Only one firm of ply-wood manufacturers has complained to us that the life of the indigenous papers used on its Drum Sanders is barely 50 per cent. cf that of well-known imported brands. But as this firm has given no details regarding the grade of the paper used or the name of the producing firm, we have not been able to investigate into the complaint. From the evidence placed before us, we are satisfied that the indigenous coated abrasives do not compare unfavourably with the imported ones in respect of quality.

19. There are various kinds of coated abrasives, such as, sand, glass or flint

Cost of production and paper and cloth, emery paper and cloth, garnet paper and
fair selling price. cloth, aluminium oxide paper, cloth and combination, silicon carbide paper, cloth and combination, water-proof abrasive paper, etc. These are sold in the form of sheets,

rolls, discs, belts, tapes, or coils. As we have already stated in paragraph 4 above, water-proof abrasives are not at present being produced in India. Of the rest, the most important are sand paper and emery cloth, the other items forming a comparatively small proportion (20 per cent.) of imports as well as indigenous production. These again are produced in different qualities or grades depending upon the backing material and the abrasive grains used. As it would be impossible to make a precise allocation of costs to these various items, we have tried to estimate the average cost of production in respect of two principal items, viz., sand paper and emery cloth. Of the six firms which have applied for protection, only two could be cost-investigated by our Cost Accounts Officer, namely, Ajax and Thiranis. Those two firms also sent their representatives for tendering oral evidence during the public enquiry held by the Board. Of these two, again, it was agreed that Ajax should be taken as the most representative unit for the purpose of estimating the cost of production. The following estimates are based on the cost data relating to the Ajax factory, and they are arrived at after scrutiny of the cost investigation report submitted by the Cost Accounts Officer and a full discussion in the course of the enquiry.

Board's estimate of future costs per ream of sand/flint paper.

July-December 1946
(Basis 50 reams per day)

	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate. Rs.	Amount. Rs.
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I. Raw materials:—

(a) Paper	lbs.	11.2	0.396	4.44	10.0	0.396	3.96
(b) Glue	lbs.	4.2	1.269	5.33	4.2	1.269	5.33
(c) Flint	..	..	lbs.	33.6	0.022	0.74	27.0	0.022	0.59

Total ..

10.51

9.88

0.51 ..

0.67 ..

0.60 ..

1.70 ..

0.70 ..

0.21 ..

1.36 ..

0.65 ..

0.65 ..

0.65 ..

0.65 ..

0.65 ..

3. Ordinary current repairs and maintenance of buildings, plant and machinery.

4. Labour

5. General services, etc.

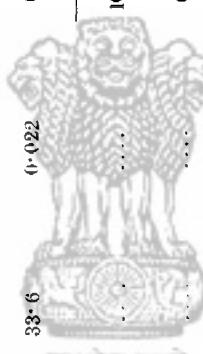
6. Expenditure on quality control, etc. ..

7. Packing charges

8. Miscellaneous, water, consumable stores, etc.

9. Depreciation

10. Interest on working capital



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July-December 1946 (Basis 50 reams per day)				1947 and 1948 (Basis 100 reams per day)			
Qty.	Rate Rs.	Amount Rs.	Qty.	Rate. Rs.	Amount. Rs.	Qty.	Rate. Rs.
11. Managing Agents' charges	0·20
12. Directors' and Auditors' fees	0·02
13. Insurance (Fire	0·18
14. Rents, rates, etc.	0·08
15. Selling expenses	0·51
16. Miscellaneous	€·13
Total	19·15	..	..	..	15·23
Profit (10% on fixed capital)	2·00	..	..	..	1·00
Fair Selling Price	21·15	..	..	..	16·23 or Rs. 21·20 (to the nearest anna)

Board's estimate of future costs per ream of corundum or emery cloth (drill backing)

July-December 1946
(Basis 50 reams per day)

	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate. Rs.	Amount. Rs.
1. Raw materials :—						
(a) Cloth	yds.	40·0	1·095	43·80
(b) Glue	lbs.	4·2	1·269	5·33
(c) Corundum or emery	lbs.	17·4	0·340	5·92
Total		55·05
2. Power and fuel	0·51	....
3. Ordinary current repairs and maintenance of buildings, plant and machinery.	0·67	....
4. Labour	0·60	....
5. General services, etc.	1·70	....
6. Expenditure on quality control, etc.	0·70	....
7. Packing charges	0·21	....
8. Miscellaneous, water, consumable stores, etc.	1·36	....
9. Depreciation	0·65	....
10. Interest on working capital	0·65	....

July-December 1946
(Basis 56 reams per day)

1947 and 1948
(Basis 100 reams per day)

	Qty.	Rate Rs.	Amount Rs.	Qty.	Rate. Rs.	Amount. Rs.
11. Managing Agents' charges	0.40	..	0.20
12. Directors' and Auditof's fees	0.40	..	0.20
13. Insurance (Fire)	0.36	..	0.18
14. Rents, rates, etc.	0.16	..	0.08
15. Selling expenses	1.02	..	0.51
16. Miscellaneous	0.26	..	0.13
Total]	63.69	..	..	54.89
Profit (10% on fixed capital)	2.00	..	..	1.00
<i>Fair Selling Price</i>	65.69 or Rs. 65.11.0	..	..	55.89 or Rs. 55.14.0 (to the nearest anna).

20. FLINT PAPER.—(i) *Paper*.—In respect of flint paper, the quantity required

Explanatory remarks has been reduced from 11·2 lbs. in 1946 to 10 lbs. on the estimates of cost of production. in 1947 and 1948 on the basis of British standard specifications.

(ii) *Flint*.—The quantity of flint required in 1946 is 33·6 lbs. It is understood that this high figure is due to the company at present manufacturing mostly coarser varieties of flint paper. In future, however, it will be producing coarser and finer varieties in the ratio of 2 : 1. On this basis the quantity of flint has been reduced from 33·6 lbs. to 27 lbs.

21. EMERY CLOTH.—(i) *Cloth*.—Two qualities of cloth are used for emery cloth, viz., drill cloth and cheese cloth, the former being required for the superior quality and the latter for the cheaper quality. Ajax have been making superior quality of emery cloth, and the existing rate for their drill (backing) cloth is Rs. 1·09 per yard of 35" width. It was agreed that for future purposes this might be reduced to Re. 1 per yard, for the same width.

(ii) *Cost of corundum and emery*.—In 1946, Ajax have been using Salem corundum powder at an all-inclusive price of Re. 0·34 per lb. It is anticipated that in future they will be able to get Turkish emery at a much cheaper rate. We have taken the f. o. b. price of Turkish emery at Rs. 112 per ton; the other charges inclusive of freight up to the factory would come to Rs. 108 per ton; and with duty at Rs. 66 per ton (30 per cent. *ad valorem*) the price of ore at the works would figure out to Rs. 286 per ton. On this basis the future all-inclusive cost of emery would be Re. 0·183 per lb. as shown below :—

				(Rupee per lb.)
Cost and freight up to works			..	0·128
Crushing charges	..	..	..	0·009
Waste (25% of ore)	..	..	..	0·046
				<hr/>
			Total ..	0·183
				<hr/>

(iii) *Quantity of emery or corundum*.—The quantity of 17·4 lbs. against the corundum shown in the 1946 estimate is on the low side because the company is at present manufacturing mostly finer varieties. This has been raised to 23 lbs. based on the average production of finer and coarser varieties in future.

22. *Interest on working Capital*.—We have estimated that the working capital required would be Rs. 4·9 lakhs on which interest has been allowed at 4 per cent. per annum, which works out to Re. 0·65 per ream.

Profit.—Profit is worked out on the basis of 10 per cent. per annum on the fixed capital of Rs. 3 lakhs. This works out to Rs. 2 per ream in 1946 (on 50 reams per day) and to Re. 1 per ream in 1947 and 1948 (on 100 reams per day).

23. The fair selling price of emery cloth given in the above estimate relates to the better quality emery cloth for which drill cloth is used as **Cheaper quality emery cloth.** The cheaper quality of emery cloth is generally made with cheese cloth as backing. From the information at our disposal we estimate that the future price of cheese

cloth in this country would be about Re. 0-8-0 per yard. In estimating the fair selling price of the better quality emery cloth with drill backing, we have taken a price of Rs. 1-095 per yard in 1946 and Re. 1 per yard in 1947 and 1948 for backing (drill) cloth. The price of backing cloth for the cheaper quality emery cloth should, therefore, be reduced to Re. 0-8-0 per yard. Thus the cost of production and fair selling price of this variety of emery cloth should be less than those of the better quality emery cloth by Rs. 20 (Re. 0-8-0 per yard on 40 yards) per ream. The fair selling price of the cheaper quality emery cloth would, therefore, be Rs. 45-11-0 in 1946 and Rs. 35-14-0 in 1947 and 1948.

24. The c. i. f. prices given below are obtained from a leading firm of importers, and these tally with the figures supplied by the Emery Trade Association, London.

Item.		c.i.f. price.
<i>(Sand Paper.)</i>		
(Figures given to the nearest anna.)		
(a) Flexible Cabinet Glass paper—		R _{3.} as.
00—F2	..	19 3
M2—S2	..	25 8
2-1/2—3	..	29 13
(b) Cheapest quality glass paper—		
00—F2	..	15 14
M2—S2	..	20 10
2-1/2—3	..	27 4
<i>(Emery Cloth.)</i>		
(a) Flexible Blue twill emery cloth—		
00—1-1/2	..	75 4
2—3	..	88 7
(b) Best quality emery cloth—		
00—1-1/2	..	43 4
2—3	..	51 4
(c) Cheapest white emery cloth—		
00—1-1/2	..	31 8
2—3	..	35 0

25. The evidence placed before us indicates that the two classes of sand paper (*a*) and (*b*) are imported into this country and **Measure of protection.** also produced here roughly in equal proportions. In estimating the amount of protection necessary for sand paper, therefore, we have taken the average of the c.i.f. prices of all qualities and grades together, and compared it with the average fair selling price of all qualities of sand paper produced in India. As regards emery cloth, the two qualities produced in this country are comparable to classes (*b*) and (*c*) of imports respectively. We have therefore compared the prices of these two qualities separately with the two classes produced in this country.

Comparison of fair selling price, c.i.f. price and landed cost and the amount of duty required per ream.

SAND/FLINT/GLASS PAPER.

		1946 (figures to the nearest anna.)	1947 and 1948. (figures to the nearest anna.)
A.	Fair selling price (average of finer and coarser grades produced)	21 2	16 4
B.	C.I.F. price (average of flexible cabinet glass paper and cheapest quality glass paper, each in three different grades)	23 1	23 1
C.	Landing charges	0 7	0 7
D.	Landed cost ex-duty (B + C)	23 8	23 8
E.	Existing Duty (Pref. British 24%) ..	5 10	5 10
F.	Landed cost with duty	29 2	29 2
G.	Excess of present landed cost with duty over fair selling price	8 0	12 14
		or	or
		37·86%	79·23%

Comparison of fair selling price, c.i.f. price and landed cost, and the amount of duty required per ream.

Better quality emery cloth.

(Figures given to the nearest anna.)

Cheaper quality emery cloth.

(Figures given to the nearest anna.)

	1946		1947 and 1948		1946		1947 and 1948	
	Rs. as.	Rs. as.	Rs. as.	Rs. as.	Rs. as.	Rs. as.	Rs. as.	Rs. as.
A. Fair Selling Price [better quality emery/ corundum cloth (drill)].	65 11	55 14	A. Fair Selling Price	.. ..	45 11	35 14		
B. C. I. F. Price (better quality emery cloth, average of two grades).	47 4	47 4	B. C. I. F. Price (cheaper white emery cloth, average of two grades).	.. ..	33 4	33 4		
C. Landing charges	.. ..	0 15	C. Landing charges	.. ..	0 11	0 11		
D. Landed cost ex-duty	.. ..	48 3	D. Landed cost ex-duty	.. ..	33 15	33 15		
E. Existing duty (30%)	.. ..	14 3	E. Existing duty (30%)	.. ..	10 0	10 0		
F. Landed cost with duty	.. ..	62 6	F. Landed cost with duty	.. ..	43 15	43 15		
G. Duty required, i.e., difference between A and D.	17 8	7 11	G. Duty required, i.e., difference between A and D.	11 12	1 15			
H. Required duty as percentage of c. i. f. price.	37.04%	16.27%	H. Required duty as percentage of c. i. f. price.	35.34%	5.83%			

Amount of duty recommended.

26. The figures given above indicate that, in respect of sand, flint or glass paper, the existing duty affords an ample margin of protection to the indigenous producers. In fact, the amount of protection given by the existing duty would appear to be high in the years 1947 and 1948. But from the evidence we have received, we find that though the indigenous product is as good as the imported product in respect of quality and though the price charged for the indigenous product is lower than that of imports, there is a lingering prejudice against the former due to which the Indian producers cannot dispose of a considerable proportion of their output. Though there may be little justification for the prevalence of this prejudice, we should recognise that, since the foreign product has been familiar to the Indian market for a long time and since the Indian product, which is new to the market, has yet to establish its reputation, the present prejudice is not a quite unnatural one and is likely to last for some time longer. In order to enable the indigenous manufacturers to overcome this prejudice, we consider it desirable that the protection given by the existing revenue duty should be maintained for a few years. The relevant item is Item 30 of the Indian Customs Tariff Schedule and the standard rate of duty is 36% *ad valorem*, the preferential rate on imports from the United Kingdom 24% *ad valorem* and that on imports from Burma 12% *ad valorem*. We recommend that these duties should be converted into protective *ad valorem* duties and that they should be maintained for the period ending 31st March 1949.

27. In this connection, it is interesting to note that, in an exactly similar situation, the Australian Tariff Board in 1931 recommended an increase of duty on sand paper, glass paper and flint paper by 30 to 35 per cent. and in doing so, observed as follows :—

"It is quite obvious that the applicant Company needs little or no additional duty to enable it to meet overseas competition on the basis of price. It is, however, equally obvious that up to the present, by far the greater proportion of the local requirements is supplied by the overseas product, notwithstanding that equally efficient goods of Australian manufacture have been available. This being so, the Board considers that some additional protection is justified in order to assist the local manufacturers to overcome the prejudice which apparently exists in favour of the imported goods as against those produced locally."

(*Vide* Australian Tariff Board's Report on Abrasive Papers and Cloth, 1931, page 8.)

28. So far as emery cloth is concerned, the figures given in paragraph 25 above indicate that, for the better quality emery cloth a duty of about 40 per cent. in 1946 and 20 per cent. in 1947 and 1948, and for the cheaper quality emery cloth a duty of about 40 per cent. in 1946 and 10 per cent. in 1947 and 1948 would be necessary. The existing revenue duty on emery cloth (Item 87 of the Indian Customs Tariff Schedule) is 30 per cent. *ad valorem*. We recommend that this revenue duty should be replaced by a protective duty of 40 per cent. *ad valorem* and that the protective duty should remain in force for the period ending 31st March 1949. In this case also, the proposed duty would appear to afford rather high protection to the indigenous manufacturers during the period January 1947 to March 1949, but, for reasons explained in paragraph 26 above, we think that this additional margin of protection would be justified in the case of emery cloth also.

29. Apart from the desirability of enabling the indigenous manufacturers to overcome the prejudice in favour of the foreign product, there is a further important reason why this additional margin of protection which we are recommending would be justified. The figures given in the two tables of comparative prices in paragraph 25 above indicate that, by the end of the proposed period of protection, the indigenous industry would be able to establish itself on a strong and independent footing in respect of sand/flint/glass paper and very nearly on a competitive level with the importers in respect of emery cloth. The duty should, we believe, assist in expediting the progress of the industry towards a position of independence.

30. Moreover, our information is that abrasive papers are produced to a certain extent by small producers on a cottage industry basis.

Benefit to cottage industries. The additional protection we are recommending is likely to give an impetus to cottage workers, especially in respect of bazaar qualities of sand papers.

31. Besides these categories of imports of abrasive papers and cloth, there are also various sizes and qualities of discs, belts, tapes,

Discs, belts, etc. rolls, coils and shapes, all of which are either made out of abrasive paper or abrasive cloth or their combination in

various proportions. All rolls, belts, discs, shapes, tapes 4" or above and a special tapes $1\frac{1}{2}$ " used in boot and shoe trade are treated as parts of machinery under Item 72 (3) of the Indian Customs Tariff Schedule and are subject to a revenue duty of 10 per cent. *ad valorem*. As these articles are made of the same materials and by the same process as sand papers and emery cloth coming in the form of sheets, we recommend that, when they are imported as stores, apart from machinery, all abrasive rolls, coils, discs, belts, shapes, etc., made of paper should be subject to the same protective duties as abrasive paper, and all rolls, coils, discs, belts, shapes, etc., made of cloth, should be subject to the same protective duty as abrasive cloth. When, however, they are imported as parts of machinery along with machinery, they should be subject to the existing 10 per cent. *ad valorem* revenue duty.

32. At a late stage of our enquiry, after the oral evidence had been already over, we received an application from Messrs. Dronsfield's

Emery fillet. India Sales Agency, Bombay, for the exclusion of "emery fillet" from the scope of any protective duties that might

be recommended for coated abrasives. This application was subsequently supported by the Textile Commissioner in his letter dated the 3rd June 1946. The grounds for the claim are that it is a special abrasive used exclusively by the cotton and woollen textile mills and that it is not produced in India. As this request came too late for a public enquiry, we have discussed the matter with our Technical Adviser, Mr. B. C. Mallick, of the Department of Industries and Supplies, and have been advised that this category of coated abrasives can also be made by the Indian manufacturers. We have, therefore, come to the conclusion that there is no ground for the exclusion of emery fillet from the scope of the protective duties we have recommended.

33. In paragraph 17 above we have indicated that coated abrasives to the value of Rs. 9·6 lakhs are due to be imported into this

No import licence to be issued for the second half of 1946. country against licences issued so far and that the quantum of imports represented thereby would be not less than half the demand of the country during the current year, leaving thereby scope for utilising not more than one-half of the

rated capacity of the indigenous industry on a single shift basis or one-fourth of its rated capacity on a double shift basis. It will obviously be a serious state of affairs if the indigenous manufacturers cannot even find scope for effectively utilising one-fourth of their rated capacity during the current year. We, therefore, recommend that no import licence should be issued for the second half of 1946 in respect of coated abrasives, with the exception of water-proof abrasives and emery fillet which are not at present being produced in India. From the beginning of 1947 all coated abrasives should be placed on the open general licence list.

34. As stated by us in paragraph 13 above, coated abrasives are consumable stores which are used extensively by engineering works,

Burden of protection. automobile works, leather factories, railways and furniture makers. It was not possible for us to obtain any definite information as to the incidence of the cost of coated abrasives on the total cost of production in the industries concerned. But, since coated abrasives are in the same category of stores as grinding wheels, and since in our enquiry in the case of the grinding wheels we found that the incidence of the cost of grinding wheels on the total cost of production in the industries concerned is very small (*vide* paragraph 43 of the Report on the Grinding Wheels Industry), we conclude that the incidence of an increase in the price of coated abrasives as a result of protection would be negligible.

35. As we have stated in paragraph 19 above, of the several firms now engaged in the production of coated abrasives, only two could be

Eligibility for protection. cost-investigated and examined by us, namely, Ajax and Thiranis. We are satisfied that both these firms are financially strong and have been conducting their business on sound lines. Comparative figures of prices and costs would also show that they are already as efficient as the competitive foreign firms in the production of abrasive papers and that they can be expected to be very nearly on a footing of equality with foreign competitors in respect of abrasive cloths at the end of the proposed period of protection. Moreover, as coated abrasives are essential consumable stores for the engineering industry, railways, automobile works, and furniture makers, the protection of the coated abrasives industry is in the national interest, and the cost of such protection to the community will be very small. The industry, therefore, satisfies all the conditions of protection laid down by Government.

36. Synthetic grains (aluminium oxide and silicon carbide) are imported at present from U.S.A. and are subject to a duty of 30 per

Other measures of assistance : Refund of import duty on synthetic grains, emery, and kraft paper. cent. *ad valorem*. In the case of the grinding wheels industry, we have recommended that the import duty on these grains paid by grinding wheels producers should be refunded. In the case of the coated abrasives industry also, we recommend that the same concession should be granted. These grains are required by the industry in question in rather small quantities and the loss of revenue to Government will be small.

37. A duty of 30 per cent. *ad valorem* is at present levied on emery imported from Turkey and kraft paper imported from U.S.A. We recommend that, consistently with the principle of freeing raw materials from import duty recently announced by the Honourable the Finance Member, Government of India, the duty

on these two articles should be refunded in the case of firms producing coated abrasives. The refund of duty on kraft paper will mean an additional advantage to the indigenous manufacturer of approximately Re. 1 per ream of paper produced, which will be equal to an import duty of about 4 per cent. on current c.i.f. prices, while the refund of duty on emery will amount to an advantage of Re. 1 per ream of abrasive cloth produced, which will be equal to an import duty of some 2 or 3 per cent. on current c.i.f. prices. We have recommended the rebate of duty on kraft paper on the assumption that the Indian paper manufacturers, in view of the heavy demand for the standard qualities of paper, would not be in a position, at least during the protection period, to manufacture the kraft paper required by the abrasives industry. If, however, evidence is forthcoming that the Indian paper manufacturers are manufacturing kraft paper, Government should suspend the grant of rebate until the case of the paper industry is examined. With regard to the rebate of duty on Turkish emery, we are conscious of the fact that such rebate may possibly be a handicap to the development of the Indian corundum industry. The question of developing the Indian corundum industry should be taken up for examination by Government. In any case, we are of the opinion that protection by customs duty is not the appropriate method of protecting or assisting a mineral industry like corundum, but that other forms of substantial assistance should be devised.

38. Supply of backing cloth. We were informed by the manufacturers of abrasive cloth that there has been some difficulty in securing an adequate supply of suitable backing cloth at a reasonable price. From the evidence received by us, we find that this difficulty was largely due to the tightness of the supply position in respect of cloth. We estimate that, during the second half of 1946, the maximum requirements of Ajax would be 17,750 yards of cloth per month and those of Thiranis 11,250 yards per month, and that during 1947 and 1948, their requirements would be about double those of 1946, that is, 35,550 yards per month for Ajax and 22,450 yards per month for Thiranis. During the final stages of our enquiry at Ootacamund, we had the advantage of discussing the matter at some length with Mr. Dharma Vira, I.C.S., Textile Commissioner, who informed us that, in the present state of supply, he could arrange to release cloth to the extent of not more than 10,000 to 15,000 yards per month to the coated abrasives industry. Messrs. Binny & Co. of Madras have assured us through the Textile Commissioner that they are prepared to take up with Ajax the matter of supplying cloth to the required specifications at a reasonable price. While we have not been able to obtain the requisite data for suggesting reasonable prices for the two qualities of the backing cloth required, we recommend that the Textile Commissioner should do everything possible in order to enable the manufacturers of coated abrasive cloth to obtain the necessary quantities of cloth of the requisite specifications at reasonable prices.

39. Facilities for exports. As the rated capacity of the indigenous manufacturers of coated abrasives is definitely higher than the probable demand in the country for the next three years, we recommend that all facilities for the exportation of coated abrasives to the neighbouring countries like Burma, Malaya, Ceylon, etc., should be granted by Government. This would not involve any financial assistance from Government.

40. In order to enable the indigenous manufacturers to establish the reputation of their products, we recommend that the Engineering **Specifications to be laid down.** Association of India should be moved to take steps, in consultation with Government Test House, Alipore, to prescribe suitable standard specifications for Indian abrasive papers and cloths.

Summary of recommendations. 41. Our recommendations are summed up as under : -

(1) The present revenue duties on abrasive papers (item 30 of the Indian Customs Tariff Schedule), the standard rate being 36 per cent. *ad valorem*, the preferential rate on imports from U.K. 24 per cent. *ad valorem*, and the preferential rate on imports from Burma 12 per cent. *ad valorem*, should be converted into protective *ad valorem* duties and be maintained for the period ending 31st March 1949. (Paragraph 26.) This article should be listed as a separate item in the Customs Tariff Schedule.

(2) The present revenue duty on emery cloth (item 87 of the Indian Customs Tariff Schedule) which is 30 per cent. *ad valorem*, should be replaced by a protective duty of 40 per cent. *ad valorem* and this should remain in force for the period ending 31st March 1949. (Paragraph 28.) This article should also be listed under a separate number in the Customs Tariff Schedule.

(3) All abrasive rolls, coils, discs, belts, shapes, tapes, etc., made of paper, when they are imported as stores apart from machinery, should be subject to the same protective duties as abrasive papers. (Paragraph 31.)

(4) All abrasive rolls, coils, discs, belts, shapes, tapes, etc., made of cloth or combination of paper and cloth, when they are imported as stores apart from machinery, should be subject to the same duties as abrasive cloth. (Paragraph 31.)

(5) No import licence for coated abrasives should be issued for the second half of 1946 and thereafter they should be placed on the open general licence list. (Paragraph 33.)

(6) The present revenue duty of 30 per cent. *ad valorem* on synthetic grains should be refunded in the case of firms producing coated abrasive paper and cloth of all grades, shapes and sizes. (Paragraph 36.)

(7) The present revenue duty of 30 per cent. *ad valorem* on emery and kraft paper should be refunded in the case of firms producing coated abrasive paper and cloth of all grades, shapes and sizes. If evidence is forthcoming that the Indian paper manufacturers are manufacturing kraft paper, Government should suspend the grant of rebate until the case of the paper industry is examined. The question of developing the Indian corundum industry should be taken up for examination at an early date by Government. (Paragraph 37.)

(8) Arrangements should be made by the Textile Commissioner to release reasonable quantities of backing cloth of the requisite specifications for the manufacturers of coated abrasive cloth. (Paragraph 38.)

(9) All facilities should be given for the exportation of coated abrasives from India. (Paragraph 39.)

(10) The Engineering Association of India should be moved to take steps to prescribe suitable standard specifications for indigenous coated abrasives. (Paragraph 40.)

42. We desire to place on record our appreciation of the valuable advice given to us by Mr. Dharma Vira, I.C.S., Textile Commissioner, and Mr. B. C. Mallik of the Department of Industries and Supplies, Government of India, during the course of the enquiry. Our thanks are also due to Dr. B. K. Madan, Deputy Secretary of the Board, for his help and advice at every stage of the enquiry, and to Mr. P. V. R. Rao, the Cost Accounts Officer attached to the Board, for carrying out cost investigation of two firms at short notice.

SHANMUKHAM CHETTY—President.

C. C. DESAI—Member-Secretary.

NAZIR AHMAD—Member.

H. L. DEY—Member.

B. K. MADAN—Deputy Secretary.
(Camp) Ootacamund, the 23rd June 1946.



APPENDIX I

DEPARTMENT OF COMMERCE

RESOLUTION

TARIFFS

New Delhi, the 3rd November 1945.

No. 218-T(55)/45.—In the statement on industrial policy issued by the Government of India on the 23rd April 1945, it was announced that, pending the formulation of a tariff policy appropriate to the post-war needs and conditions of the country and the establishment of permanent machinery for the purpose, Government would set up machinery for investigating claims from industries, which have been started or developed in war-time and which are established on sound lines, to assistance or protection during the transition period. A press communique issued on the same date invited industries to address their claims to the Secretary to the Government of India in the Department of Commerce.

2. Several industries have accordingly applied for assistance or protection, and on a preliminary examination of their claims, the Government of India have come to the conclusion that applications submitted by the following industries call for a detailed examination :—

- (i) non-ferrous metals, including antimony ;
- (ii) grinding wheels ;
- (iii) caustic soda and bleaching powder ;
- (iv) sodium thiosulphate, sodium sulphite anhydrous, sodium bisulphite ;
- (v) phosphates and phosphoric acid ;
- (vi) butter colour, aerated water powder colour ;
- (vii) rubber manufactures ;
- (viii) fire hose ;
- (ix) wood screws ;
- (x) steel hoops for baling.

Other applications are under the consideration of Government, and further action in their case will be taken in due course.

3. In addition to the industries which have applied for assistance or protection, there are certain industries the starting of which was considered essential by the Government of India under conditions created by the war. Early in 1940, Government announced that specified industries promoted with their direct encouragement during war-time might feel assured that, if they were conducted on sound business lines, they would, by such measures as Government might devise, be protected against unfair competition from outside India. In accordance with this

decision, the following industries have been given an assurance of protection against unfair competition after the war :—

- (i) bichromates ;
- (ii) steel pipes and tubes up to a nominal bore of 4 inches ;
- (iii) aluminium ;
- (iv) calcium chloride ;
- (v) calcium carbide ;
- (vi) starch.

Of these industries, only those engaged in the manufacture of bichromates, calcium chloride and starch have so far applied for assistance or protection during the transition period. The Government of India consider that the applications submitted by these three industries also call for immediate investigation.

4. For the purpose of these and any subsequent investigations, the Government of India have decided to set up a Tariff Board for a period not exceeding two years, in the first instance. The Board will consist of :—

PRESIDENT :

Sir R. K. Shanmukham Chetty, K.C.I.E.

MEMBERS :

Mr. C. C. Desai, C.I.E., I.C.S.

Professor H. L. Dey, D.Sc. (London).

The Board will include one more Member whose name will be announced shortly. Mr. Desai will act as Secretary to the Board in addition to his duties as Member.

5. The Tariff Board is requested to undertake, in such order as it thinks fit, the investigation of claims put forward by the industries specified in paragraphs 2 and 3 above. In the case of each industry the Board will, after such examination as it considers necessary, report whether the industry satisfies the following conditions :—

(1) that it is established and conducted on sound business lines ; and

(2) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance ; or

(b) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive. Where a claim to protection or assistance is found to be established, i.e., if condition (1) and condition (2) (a) or (b) are satisfied, the Board will recommend—

(i) whether, at what rate and in respect of what articles, or class or description of articles, a protective duty should be imposed ;

(ii) what additional or alternative measures should be taken to protect or assist the industry ; and

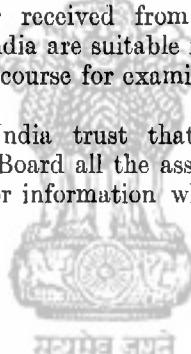
(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.

In making its recommendations the Board will give due weight to the interests of the consumer in the light of the prevailing conditions and also consider how the recommendations affect industries using the articles in respect of which protection is to be granted. Since relief, to be effective, should be afforded without delay, the Board is requested to complete its enquiries with all possible expedition and to submit a report as soon as the investigation of the claim of each industry is concluded.

6. The headquarters of the Board will be at Bombay, but it will visit such other places as it thinks necessary for purposes of its enquiries. Firms and persons interested in any of these industries, or in industries dependent on the use of the products of these industries, who desire that their views should be considered, should address their representations to the Secretary to the Board.

7. Any claims hereafter received from other industries which in the opinion of the Government of India are suitable for examination by the Board will be referred to the Board in due course for examination.

8. The Government of India trust that Provincial Governments and Administrations will afford the Board all the assistance which it may require and will comply with any request for information which may be addressed to them by it.



N. R. PILLAI,
Secretary.

APPENDIX II

GOVERNMENT OF INDIA

DEPARTMENT OF COMMERCE

New Delhi, the 16th February 1946

RESOLUTION

TARIFFS

No. 218-T (55)/45.—In pursuance of paragraphs 2, 3 and 7 of their Resolution in the Department of Commerce, No. 218-T (55)/45, dated the 3rd November 1945, the Government of India have decided to refer to the Tariff Board for investigation applications for assistance or protection received from the following industries, namely :—

- (i) Glucose ;
- (ii) All Abrasives other than Grinding Wheels ;
- (iii) Hurricane Lanterns ;
- (iv) Cocoa powder and Chocolate ;
- (v) Aluminium ;
- (vi) Preserved Fruits.

2. In making its enquiries, the Board will be guided by the principles laid down in paragraph 5 of the Resolution referred to above.

3. Firms or persons interested in any of these industries or in industries dependent on the use of these articles, who desire that their views should be considered by the Tariff Board, should address their representations to the Secretary to the Board, Caltex House, Ballard Estate, Bombay 1.

4. Similar announcements will be made from time to time regarding claims from other industries found suitable for examination by the Board.

N. R. PILLAI,
Secretary to the Government of India.

APPENDIX III

List of persons, firms and associations which submitted representations.

1. The Ajax Products Ltd., Madras.
2. Messrs. Krishnalal Thirani & Co., Calcutta.
3. The National Sand Paper Mills Ltd., Rawalpindi.
4. The Engineering & Mineral Industrial Research Laboratory, Bangalore.
5. The Hindustan Abrasives, Bihta, South Bihar.
6. The Engineering Association of India, Calcutta.
7. Messrs. Scott & Pickstock Ltd., Calcutta.
8. Messrs. H. S. Cox & Co., Bombay.
9. The Emery Trade Association, London.
10. Messrs. Dronfield's India Sales Agency, Bombay.
11. The Plywood Products, Sitapore.
12. Kashmir Government Willows Factory, Miransabib.



APPENDIX IV.

List of witnesses examined and the dates on which they were examined.

Importers.

Mr. H. S. Cox .. Representing M/s H. S. Cox & Co., Bombay
and
The Emery Trade Association, London. 23rd May 1946.

Producers.

Mr. A. M. M. Murugappa Chettiar, assisted by Mr. R. Shanker Raman Representing the Ajax Products Ltd., Madras.
and
Mr. K. V. Nath .. The National Sand Paper Mills Ltd., Rawalpindi. 23rd and 24th May 1946.
Mr. Krishnalal Thirani assisted by Mr. B. L. Arukia. Representing M/s Krishnalal Thirani & Co., Calcutta.



APPENDIX V.

C. I. F. prices (1916) of coated abrasives.

Description.				c.i.f. prices.	
				Per Ream.	
				Rs. as.	
Flexible Blue Twill Emery Cloth—					
Nos. 00-1-1/2	..	..	..	75	4
.. 2 — 3	..	..	..	88	7
Best quality White Emery Cloth—					
Nos. 00-1-1/2	..	..	..	43	4
.. 2 — 3	..	..	..	51	4
Cheapest White Emery Cloth—					
Nos. 00-1-1/2	..	..	..	31	8
.. 2 — 3	..	..	..	35	0
Flexible Cabinet Glass Paper—					
Nos. 00-F2	..	..	..	19	3
.. M-2, S-2	..	..	..	25	8
.. 2-1/2-3	..	..	..	29	13
Cheapest quality Glass Paper—					
Nos. 00-F2	..	..	..	15	14
.. M-2, S-2	..	..	..	20	10
.. 2-1/2-3	..	..	..	27	4
<i>Per Dozen.</i>					
Emery Belts 36" × 4" Single—					
2/0 to 1½ 2/3	..	..	..	6	7
..	..	..	..	7	1
Emery Belts 36" × 4" Double—					
2/0 to 1½ 2/3	..	..	..	10	3
..	..	..	..	10	12
Emery Belts Single 60" × 8" —					
2/0 to 1½ 2/3	..	..	..	19	4
..	..	..	..	21	6



APPENDIX V—contd.

Description				c.i.f. prices.
	<i>Per Dozen.</i>			
	Rs. as.			
Emery Belts Double 60" × 8"—				
2/0 to 1½	31 12
2/3	33 13
Emery Paper Discs 30" diameter--				
1½	11 15
2	12 11
2½	13 6
3	15 1
Reinforced Discs Flat—				
9½ × 16R	10 7
Depressed Centrea	11 8
Flint Comb 24" No. 3	106 8
Ruby Rolls 28" No. 3	124 5
Flint Tanning Paper 150/100—				<i>Per roll of 50 yds.</i>
8"	11 7
10"	14 4
12"	16 14
24"	31 8
Carborandum Tanning Paper 150/100—				
8"	16 12
10"	20 13
12"	24 12
24"	46 8
Carnet Paper 150/100—				
4"	8 1
8"	15 9
10"	19 8
24"	43 8
Carnet Cloth—				
4"	21 6
8"	42 3
10"	52 12
24"	119 1